

Science Year 4

Knowledge Organiser



Topic: States of Matter

National Curriculum Statements

- Has the ability to group materials into solids, liquids and gases and compare their properties
- Is able to describe physical changes when materials are heated or cooled and can state the temperature that these changes occur (e.g. freezing and boiling points of water)
- Demonstrates an understanding of the part played by evaporation and condensation in the water cycle

Key vocabulary

States of matter	Materials can be one of three states: solids, liquids or gases. Some materials can change from one state to another and back again.
Solids	These are materials that keep their shape unless a force is applied to them. They can be hard, soft or even squashy. Solids take up the same amount of space no matter what has happened to them.
Liquids	Liquids take the shape of their container. They can change shape but do not change the amount of space they take up. They can flow or be poured
Gases	Gases can spread out to completely fill the container or room they are in. They do not have any fixed shape but they do have a mass.
Water vapour	This is water that takes the form of a gas. When water is boiled, it evaporates into a water vapour.
Melt	To turn a solid into a liquid.
Freeze	To turn a liquid into a solid.
Evaporate	To turn a liquid into a gas.
Condense	To turn a gas into a liquid.
Precipitation	Liquid or solid particles that fall from a cloud as rain, sleet, hail or snow.

I am a scientist as I gather evidence and use research from previous scientists, to make hypotheses and test them through experiments. I discuss results and draw conclusions.

Key enquiry questions:

- What happens to a liquid if you change the container it is in?
- Is sand solid, liquid or gas?
- How do we know that gases exist?
- Is there a relationship between the fat content of chocolate and the temperature at which the chocolate solidifies?
- How can we make something dry faster?
- Where does the water to form clouds come from?
- Where does rain go?

